Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application.

Listing of Claims:

Claim 1 (Currently Amended): A wireless packet communication system comprising a base station and a plurality of mobile units, wherein

a mobile unit "i" notifies information indicating a transmission rate DRC_i (n) receivable with downlink, information of the transmission rate DRC_i (n) itself or information from which the transmission rate DRC_i (n) can be derived to a base station in every slots,

and the base station computes R_i (n) relevant to all the mobile units "i" in every slots capable of transmission in accordance with the following formula (1) or a formula equivalent to the formula (1),

further, the base station computes an evaluation function F_i (n) in a slot "n" relevant to all the mobile units "i" in accordance with the following formula (2); determines a mobile unit "m" showing maximum value of the evaluation function Fi (n); and

transmits a packet to the mobile unit "m" with a downlink at a transmission rate DRC_m (n) at which the mobile unit "m" is receivable,

$$R_i(n) = (1 - \tfrac{1}{t_c}) x R_i(n-1) + \tfrac{1}{t_c} x f(r_i(n-1)) \qquad \ldots (1)$$

wherein r_i (n) represents a transmission rate in a slot "n" relevant to a mobile unit "i"; t_c represents a time constant;

and f ( ) denotes an arbitrary function, provided if $f(x) \neq C \cdot x$.

$$F_i(n) = \frac{DRC_i(n)}{R_i(n)} \qquad \underline{\text{(C is an arbitrary constant)}} \qquad \ldots (2)$$

Claim 2 (Currently Amended): A wireless packet communication system according to claim 1, wherein, when it is assumed that the transmission rate DRC_i (n) at which the mobile unit "i" is receivable is an always constant value "x", when a target value of a relative throughput of the mobile unit is S (x), the function f ( ) is the following formula (3) or a formula equivalent to the formula (3):

$$f(x) = \frac{C \cdot x^2}{S(x)} \qquad \text{(C is an arbitrary constant)} \qquad \ldots (3)$$

Claim 3 (Original): A wireless packet communication system according to claim 1, wherein function f ( ) in the foregoing formula (1) is the following formula (4) or a formula equivalent to the formula (4):

$$f(x) = \frac{\sum_{k=1}^{N_2} h_k(x)}{\sum_{j=1}^{N_1} g_j(x)} \qquad (\ g_j(x)\ \text{and}\ h_j(x)\ \text{are arbitrary functions.}) \qquad \ldots (4)$$

Claim 4 (Original): A wireless packet communication system according to claim 1, wherein the formula f ( ) in the foregoing formula (1) is the following formula (5) and is a formula equivalent to the formula (5):

$$f(x) = \frac{\sum_{k=1}^{N_2} c_k \cdot x^{d_k}}{\sum_{j=1}^{N_1} a_j \cdot x^{b_j}} \qquad (a_j, \ b_j, \ c_k \ \text{and} \ d_k \ \text{are arbitrary constants.})$$

$$\cdots \ (5)$$

Claim 5 (Original): A wireless packet communication system according to claim 4, wherein the constant in the foregoing function (5) is $N_1=2$, $b_1=0$, $b_2=1$, $N_2=1$, $d_1=2$.

Claim 6 (Original): A wireless packet communication system according to claim 4, wherein the constants in the foregoing function (5) is $N_1=1$, $b_1=0$, $N_2=1$, $d_1 \neq 1$.

Claim 7 (Original): A wireless packet communication system according to claim 4, wherein the constants in the foregoing function (5) is $N_1=2$, $b_1=0$, $b_2=1$, $N_2=1$, $d=1$.

Claim 8 (Original): A wireless packet communication system according to claim 1, where in a plurality of mobile units are classified by a plurality of classes [1] to [M] in advance, and the function $f(\ )$ in the foregoing formula (1) is $f_k(x)$ relevant to the mobile units of class [k] (k=1 to M).

Claim 9 (Currently Amended): A wireless packet communication system according to claim 8, wherein the foregoing function $f_k(x)$ (k=1 to M) is $f_k(x)$ that has a relationship with the following formula (6).

$$f_2(x) = \frac{1}{A_2} \cdot f_1(x)$$

$$f_3(x) = \frac{1}{A_3} \cdot f_1(x) \qquad \text{(A is an arbitrary constant)} \qquad \dots (6)$$

$$\vdots$$

$$f_m(x) = \frac{1}{A_m} \cdot f_1(x)$$

Claim 10 (Original): A wireless packet communication system according to claim 1, wherein formula f ( ) of the foregoing formula (1) relevant to a mobile unit is a function according to a position of the mobile unit; a distance between the mobile unit and the base station; an orientation of the mobile unit viewed from the base station, and a movement speed or an arbitrary combination of these factors.

Claim 11 (Original): A wireless packet communication system according to claim 1, wherein the function f ( ) in the foregoing formula (1) is a function according to a communication load, a date and time, a meteorological condition, traffic state or an arbitrary combination of these factors.

Claim 12 (Original): A wireless packet communication system according to claim 1, wherein, in the case where a plurality of base stations exist, the function f ( ) in the foregoing formula (1) is a function selected for each base station, carrier, or combination of these factors, and each of the base stations computes the foregoing formula (1).

Claim 13 (Original): A base station in a wireless packet communication system according to claim 1, wherein the base station computes the foregoing R_i (n) and F_i (n), determines a mobile unit "m" showing maximum value of F_i (n), and transmits a packet to the mobile unit "m" at a transmission rate DRC_m (n) at which the mobile unit is receivable.